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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,591	08/14/2001	Louis L. Hsu	728-216 (YOR9-2001-0444_U	9143

7590 04/22/2004

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EXAMINER	
NGUYEN, DANNY	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,591	HSU ET AL.	
	Examiner	Art Unit	
	Danny Nguyen	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-19,21 and 22* is/are rejected.

7)☒ Claim(s) *10 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/10/2003 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, and 12-15, 21, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Keeth (USPN 5,946,257).

Regarding claims 1, 2, Keeth discloses an integrated circuit system (see fig. 1 and 8) having a plurality of macros (memory arrays 801(1) to 801(8)), the integrated circuit comprises an external voltage supply input (the external supply input voltage Vcc) configured to supply an external voltage to the integrated circuit; and a plurality of internal voltage supply generators (e.g. 804 (1) to 804 (8)), each connected to a respective macro and configured for receiving the external voltage for generating an internal voltage supply for operating its respective macro (e.g. col. 9, lines 55-60), and each of the plurality of internal voltage supply generators including at least one supply

circuitry (such as circuitry shown fig. 10) for generating the internal voltage supply, at least one enable/disable circuitry. (Note that at least one circuit (819) ~~corporates~~ cooperates with each of the plurality of voltage generators (804 (1) to 804 (8)) for individually enabling and disabling one of the plurality of memory arrays as defected is found as stated in col. 11, lines 52-55) for selectively connecting and disconnecting at least a portion of the respective macro from the integrated circuit system.

Regarding claim 12, Keeth discloses an integrated circuit system (fig. 1 and 8) having a plurality of macros (such as 802 (1) to 802 (8) shown in fig. 8) comprises means for receiving an external voltage (Vcc), means (e.g. voltage generators 804 (1) to 804 (8)) coupled to the means for receiving the external voltage for generating an internal voltage supply for operating at least one of a plurality of internal voltage supply generators coupled to a respective macro, and means (such 916 of generator controller 806 shown in fig. 8 and 9) for controlling the means (such 804) coupled the means for receiving the external voltage according an enable and disable signal to selectively connect and disconnect at least a portion of the respective macro (col. 8, lines 45-52).

Regarding claim 3, Keeth discloses the external voltage is greater than the internal voltage (the internal supply voltage is approximately one half of the external supply voltage Vcc, see col. 9, lines 9, line 58).

Regarding claims 4, 13, and 21 Keeth discloses a scan-chain formed by a chain of scannable register latches storing fuse information and switch enable/disable signal (see col. 4, lines 53-57).

Regarding claims 5, 14, 15, Keeth discloses each of the plurality of internal voltage generators comprises a reference voltage generator (1004) for generating and providing a reference voltage for driving at least one voltage generator (see fig. 10).

Regarding claim 22, Keeth discloses a means (819) for performing a built-in self-test for testing the DC voltage generator system (see col. 3, lines 50-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7-9, 11, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keeth in view of Sher et al. (USPN 6,496,027).

Regarding to claims 7-9, Keeth discloses a reference supply unit (1004) for generating at least one of a voltage level and current level; a voltage limiter (1002) coupled to the reference supply unit for controlling a voltage output level outputted from the voltage limiter; and a charge pump (capacitor, see fig. 10) for receiving voltage level for generating the internal voltage supply. Keeh does not disclose an oscillator and a feedback voltage provided from the charge pump. Sher et al. disclose a voltage supply generator (26) comprises an oscillator (130) and a feedback voltage (see fig. 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Keeth to corporate an oscillator with a feedback voltage to produce the internal supply voltage to the memory arrays (col. 6, lines 5-19).

Claim 11 repeats limitations of claim 4; therefore, it is rejected accordingly.

Claims 17-19 repeat limitations of claims 7-10; therefore, they are rejected accordingly.

4. Claims 6, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keeth in view of Hsu et al (USPN 6,343,044). Keeth discloses all limitations of claims 1 and 12 except for having a substrate bias level generator, a negative word line level voltage generator, and a boosted high level voltage generator. Hsu discloses a memory (e.g. fig. 3) comprises a substrate bias level generator (Vbb), a negative word line level voltage generator (Vwl), and a boosted high level voltage generator (Vpp) (see col. 1, lines 10-42 and col. 5, lines 45-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Keeth to corporate a Vbb generator, a Vwl generator, and a Vpp generator as taught by Hsuan in order to reduce cell leakage and improve the retention time (e.g. col. 1, lines 15-16).

Allowable Subject Matter

5. Claims 10 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 02/11/2004 have been fully considered but they are not persuasive.

Regarding to claim 1, applicant argued that the Keeth reference does not disclose an enable/disable circuit for selectively connecting and disconnecting at least a

portion of the respective macro from the system. The argument is not convincing because Keeth states that at least one circuit (819) ~~corporates~~ cooperates with each of the plurality of voltage generators (804 (1) to 804 (8)) for individually enabling and disabling one of the plurality of memory arrays as defected is found (e.g. col. 11, lines 52-55). Thus, applicant's arguments of claim 1 do not distinguish over Keeth.

Regarding claim 12, applicant argued that Keeth does not disclose means for controlling the means coupled the means for receiving the external voltage according an enable and disable signal to selectively connect and disconnect at least a portion of the respective macro. However, Keeth discloses means (such 916 of generator controller 806 shown in fig. 8 and 9) for controlling the means (such 804) coupled the means for receiving the external voltage according an enable and disable signal to selectively connect and disconnect at least a portion of the respective macro (col. 8, lines 45-52). Therefore, applicant's arguments of claim 12 do not over come Keeth.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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4/9/2004

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